

AMENDMENTS TO THE CLAIMS:

Please cancel claims 1-8 without prejudice and insert new claims 9-24 as follows:

1- 8. (Cancelled)

9. (New) An energy storage device comprising:
an anode comprising an array of sub-micron silicon structures supported on a silicon substrate; and
a cathode comprising lithium, arranged to form a battery.

10. (New) A device according to claim 9 wherein the anode is arranged to tolerate the conditions occasioned by the volume changes caused by charging/discharging of the battery.

11. (New) A device according to claim 9 wherein the anode is arranged to maintain structural integrity throughout the cycling of the battery.

12. (New) A device according to claim 9 wherein the anode is arranged to withstand repeated volume expansion associated with alloying during use of the battery.

13. (New) A device according to claim 9 wherein the array of sub-micron silicon structures comprise an array of sub-micron silicon pillars.

14. (New) A device according to claim 13 wherein the pillars have a surface area of about $4 FH/d$ times the substrate area wherein F is the surface fractional coverage, H is the height of the pillar and d is the diameter of the pillar.

15. (New) A device according to claim 13 in which the sub-micron pillars do not exceed a fractional coverage of 0.5 of the substrate.

16. (New) A device according to claim 13 wherein the pillars are 0.1 to 1.0 microns

in diameter and 1 to 10 microns in height.

17. (New) A device according to claim 13 wherein the pillars are approximately 0.3 microns in diameter and 6 microns in height.

18. (New) A device according to claim 9 in which the substrate comprises n-type silicon.

19. (New) A device according to claim 9 made on a wafer-bonded silicon-on-insulator substrate.

20. (New) A method of forming the anode according to claim 9, the method comprising:

- (a) depositing a film of a soluble solid onto a hydrophilic silicon substrate;
- (b) exposing the film to solvent vapour so that the film reorganises into an array of discrete hemispherical islands on the surface; and
- (c) reactively ion etching the silicon substrate with the islands of highly soluble solid acting as a resist so that the exposed silicon is etched away leaving pillars corresponding to the islands.

21. (New) A battery including a silicon anode comprising: an array of sub-micron silicon pillars fabricated on a silicon substrate; and a lithium cathode, wherein a compound film is formed on the silicon pillars in a charging step.

22. (New) A battery according to claim 21 wherein the film is a Zintl-Phase Compound.

23. (New) A battery according to claim 21 wherein the compound film is deformable so as not to give rise to significant stress-induced cracking during the volume change in a charging or discharging step.

24. (New) An electrode for a battery comprising sub-micron silicon pillars

supported on a silicon substrate and arranged to form a battery with a lithium cathode and a lithium-based electrolyte.